MICHIGAN TRUCK SAFETY COMMISSION MTSC

Michigan Truck Strategic Plan 2012-2015

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INTRODUCTION

Michigan Truck Safety Commission (MTSC)

In the mid-1980s, an anti-truck climate existed in Michigan. Problems such as passenger car/truck crashes, hours of service violations, load spillage, and excessive speed by commercial drivers led to this negative image of the industry. In response the Michigan Trucking Association (MTA), Michigan Brotherhood of Teamsters, Michigan State Police (MSP), Michigan Department of Transportation (MDOT), and the Michigan Legislature developed the legislation establishing the MTSC.

Early discussions focused on increased enforcement. In the final legislation, however, education and training emerged as focal points, with research and enforcement as sidebars. The MTA and the state's trucking industry were committed to enhancing the education and safety training of truck drivers and agreed to support an increase in truck registration fees to accomplish that goal.

In 1988, the Michigan Legislature created the MTSC with the enactment of Public Act 348 whose primary provisions were:

- Establishment of an eleven member commission representing a cross section of transportation safety groups and individuals. Seven are appointed by the governor and four by state statute, all of which are public service positions.
- Development of a truck safety fund.
- Expenditure of truck safety funds to conduct truck driver safety education programs, encouraging, coordinating and administering grants for research, and demonstration projects in truck driver safety education, and conduct special enforcement programs within the MSP Commercial Vehicle Enforcement Division (CVED).

Michigan State Police

For many years, two separate state agencies were the primary truck enforcement agencies: the Michigan Highway Department (now MDOT) and the Michigan Public Service Commission (now within the Department of Licensing and Regulatory Affairs [LARA]). The very first agency involved in regulating transportation in Michigan was the Railroad Commission, established in 1873. In 1917, the same year the MSP was created, the Michigan Legislature replaced the Railroad Commission with the Michigan Public Utilities Commission, the predecessor of the Michigan Public Service Commission. The Utilities Commission began regulating the trucking industry in 1923 with less than ten inspectors.

The Michigan Highway Department first hired weigh masters and built permanent scale facilities in 1929. Weigh masters enforced only size and weight law. In 1968, the weigh master function of the Michigan Highway Department was transferred to the Michigan Public Service Commission by a Governor's Executive Order.

In 1982, Governor Milliken transferred the enforcement function, including the personnel of the Michigan Public Service Commission to the MSP, which created the Motor Carrier Division (now known in 2011 as the CVED) to administer the program. Motor Carrier Officers (MCOs) were given full police powers for the purpose of commercial vehicle enforcement:

- MCOs detect and apprehend individuals who use commercial vehicles in criminal activities.
- Motor Carrier Investigators work with the trucking industry to detect commercial frauds and crimes including drugs, insurance schemes, and regulatory violations.
- MCOs serve as expert witnesses and are routinely called upon by other police agencies, courts and the industry to provide valuable insight and knowledge in crashes involving trucks.
- Motor Carrier personnel inspect more than 165 safety features on approximately 18,000 Michigan school buses annually.
- MCOs monitor commercial vehicle traffic to promote compliance and safe transit for the motoring public by enforcing speed and other hazardous violations.
- MCOs are experts at detecting unsafe or defective vehicles; officers perform thousands of comprehensive equipment inspections annually.
- MCOs serve as special border enforcement to preserve homeland security.

Michigan Center for Truck Safety (MCTS)

The MCTS is responsible for the day-to-day operation of educational programs sponsored by the MTSC. The MCTS is operated through a grant to the MTA and is housed at the MTA headquarters in Lansing.

The MCTS is a non-profit organization dedicated to increasing highway safety through safer truck travel. The MCTS does this by providing Michigan's trucking industry with a variety of **free** educational safety programs and services. The MCTS also provides the general motoring public information on how to share the road safely with trucks.

STRATEGIC PLAN DEVELOPMENT

A strategic plan should define a system, organization, and process for managing the attributes of the road, the driver, and the vehicle to achieve the highest level of highway safety by integrating the work of disciplines and agencies involved. Heavy-truck crashes, especially those involving other vehicles, are likely to result in serious injury. Because heavy-truck crashes have a variety of causes, a comprehensive effort to reduce crashes must focus on a range of issues, including behavioral, environmental, and operational targets.

Effective solutions require broad-based cooperation and the participation of both public and private entities. The private sector, the trucking industry, and the many motor carriers involved play the most fundamental role of managing carrier compliance with regulations and implementing safety processes beyond compliance that further enhance carrier safety. Federal, state, and local governments also play essential roles, focusing largely on regulation and enforcement, but also involving engineering and educational initiatives.

National Strategic Planning

In 1998, the American Association of State Highway and Transportation Officials (AASHTO) approved its Strategic Highway Safety Plan which was developed by the AASHTO Standing Committee for Highway Traffic Safety with the assistance of the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), and the Transportation Research Board Committee on Transportation Safety Management. The plan includes strategies in 22 key emphasis areas that affect highway safety. The plan's goal is to reduce traffic related fatalities to 1.0 (or less) for every 100 million miles traveled. Each of the 22 emphasis areas includes strategies and an outline of what is needed to implement each strategy. One of those emphasis areas is "Commercial Motor Vehicle Safety".

National Cooperative Highway Research Program (NCHRP) Project 17-18(3) developed a series of guides to assist state and local agencies in reducing injuries and fatalities in targeted areas. The guides correspond to the emphasis areas outlined in the AASHTO Strategic Highway Safety Plan. Each guide includes a brief introduction, a general description of the problem, the strategies/countermeasures to address the problem, and a model implementation process. (*http://safety.transportation.org/guides.aspx). Volume 13 of this series is a "Guide for Reducing Collisions Involving Heavy Trucks."*

State Strategic Planning

In Michigan, the development of a statewide and comprehensive strategic highway safety plan was commissioned by the Governor's Traffic Safety Advisory Commission (GTSAC) in October 2004. The GTSAC consists of the Governor (or designee), the Directors (or designees) of the Department of Community Health, Department of Education (MDE), Department of State (MDOS), MSP, MDOT, the Office of Highway Safety Planning (OHSP), the Office of Services to the Aging, and three local representatives from the county, city, and township level.

The GTSAC formed a comprehensive working group consisting of a cross section of the traffic safety community in Michigan, and arrived at twelve emphasis areas, one of which is commercial vehicle safety. Appropriately, the MTSC was identified as the entity to address commercial vehicle safety issues for Michigan and also serve as the "Action Team" to address issues within the GTSAC. Consequently, this plan serves as both the MTSC Strategic Plan and as the Action Plan for the Commercial Vehicle Safety Action Team of the GTSAC.

For development of the plan, issues and strategies from the national and state agenda were carried forward into the Michigan plan, along with issues and strategies mentioned in the 2007 University of Michigan Transportation Research Institute (UMTRI) published document, "Strategies to Reduce Commercial Motor Vehicle-involved Crashes, Fatalities, and Injuries in Michigan." The summary of this report follows:

1. The most costly commercial motor vehicle (CMV) crashes, and therefore most harmful to society, is fatal crashes, with angle crashes, head-on crashes, and rear-end crashes contributing most to overall CMV crash costs.
2. When crashes of all severity levels are considered, angle crashes, rear-end crashes, head-on crashes, same-direction sideswipe, and single-vehicle crashes contribute most to overall CMV crash costs, in the order presented.
3. Brake system defects have been associated with rear-end crashes, opposite direction crashes (head-on, opposite direction sideswipes), and intersecting path crashes (including angle collisions).
4. Lighting defects have been associated with rear-end collisions, where the CMV was the vehicle struck.
5. Steering defects have been associated with opposite-direction collisions in which the CMV was the encroaching vehicle.
6. Brake and lighting system violations are the most frequent violations in CMV inspections.
7. Violation rates in inspections are highest for CMVs from small fleets.
8. CMVs from intrastate carrier's fleets have higher rates and more serious violations in inspections than CMVs from interstate carrier fleets.
9. The CMV driver hazardous actions that contribute most to overall CMV costs are, "unable to stop in assured distance" (i.e., following too closely), "failure to yield," "speed too fast," "careless/negligent," and "disregard traffic control."
10. The most costly individual CMV driver hazardous actions (compared to the average hazardous action) are: "reckless driving," "drove left of center," "disregard traffic control," "careless/negligent," "speed too fast," "unable to stop in assured distance," (i.e., following too closely).
11. Younger crash-involved CMV drivers are more likely to be coded with hazardous actions, particularly "unable to stop in assured distance," (i.e., following too closely), and "speed too fast."
12. Younger CMV drivers are more likely to be involved in backing-up crashes than older drivers.
13. In approximately one-half of CMV crashes, a hazardous action is coded for the driver of the other vehicle.
14. Fatigue-related CMV crashes tended to be severe single-vehicle crashes in which the CMV ran off the road or resulted in rear-end crashes. Most CMV fatigued driver crashes occurred at night, between midnight and 6 a.m. on interstate roads, and involved tractor-semi trailers or doubles operated by interstate carriers. Fatigue-related crashes account for two to three percent of total CMV costs in Michigan. Eight counties (Wayne, Oakland, Kent, Macomb, Berrien, Washtenaw, Genesee and Ottawa) accounted for almost one-half of Michigan's annual CMV crash costs. Wayne County alone accounted for nineteen percent of the costs.
15. Four of the above eight counties were not among the top eight counties when CMV inspections were considered.

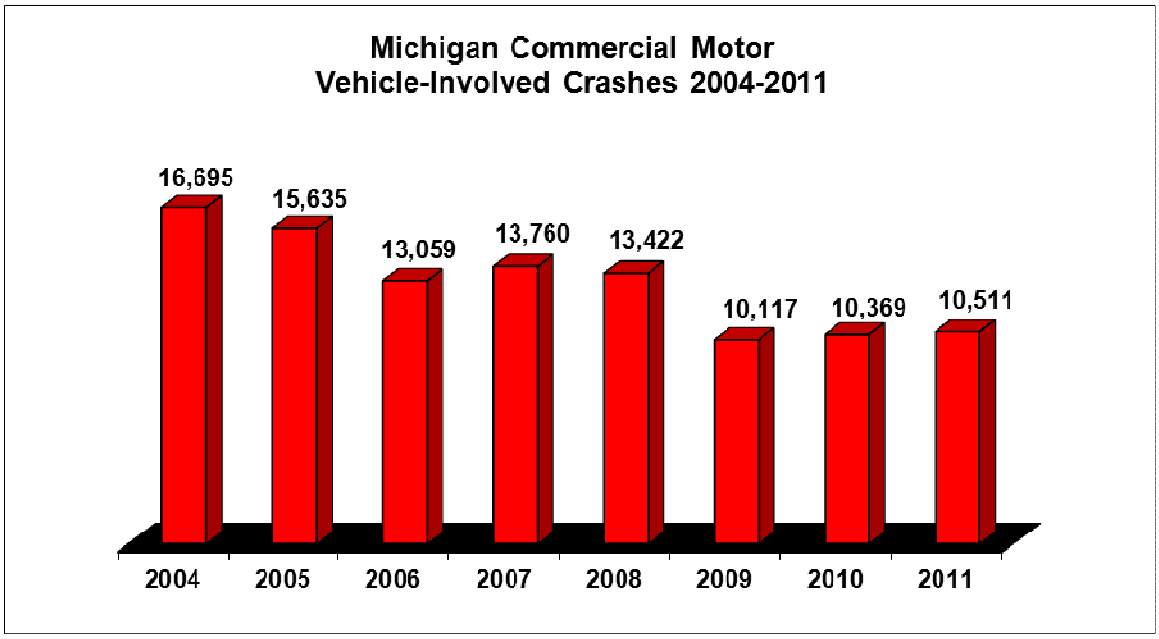
The findings from this report continue to be relevant and it is scheduled to be updated in 2013. The trucking industry has undergone significant challenges and changes in recent years, including the economic downturn which put many small carriers out of business, significant turnover in the driver population, regulatory changes such as new rules governing hours of service, and changes in the larger economy, which affect truck operations. Moreover, it is critical to monitor the state of truck safety in order to intervene early and appropriately.

National Truck Crash Data

In 2010, CMVs accounted for four percent of all registered vehicles and ten percent of the total vehicle miles traveled. The CMV registrations have increased steadily one percent per year since 2007. CMV represented eight percent of all vehicles involved in fatal crashes and three percent of all vehicles involved in injury and property-damage-only crashes in the same year. Seventy-six percent of the fatalities were occupants of another vehicle, ten percent were nonoccupants such as pedestrians or bicyclists, and fourteen percent were occupants of another CMV. While trucks are over-represented in fatal crashes, analysis of driver-related factors in crashes between CMVs and passenger vehicles indicates passenger vehicle driver errors or other driver factors are cited in more than two-thirds of the crashes.

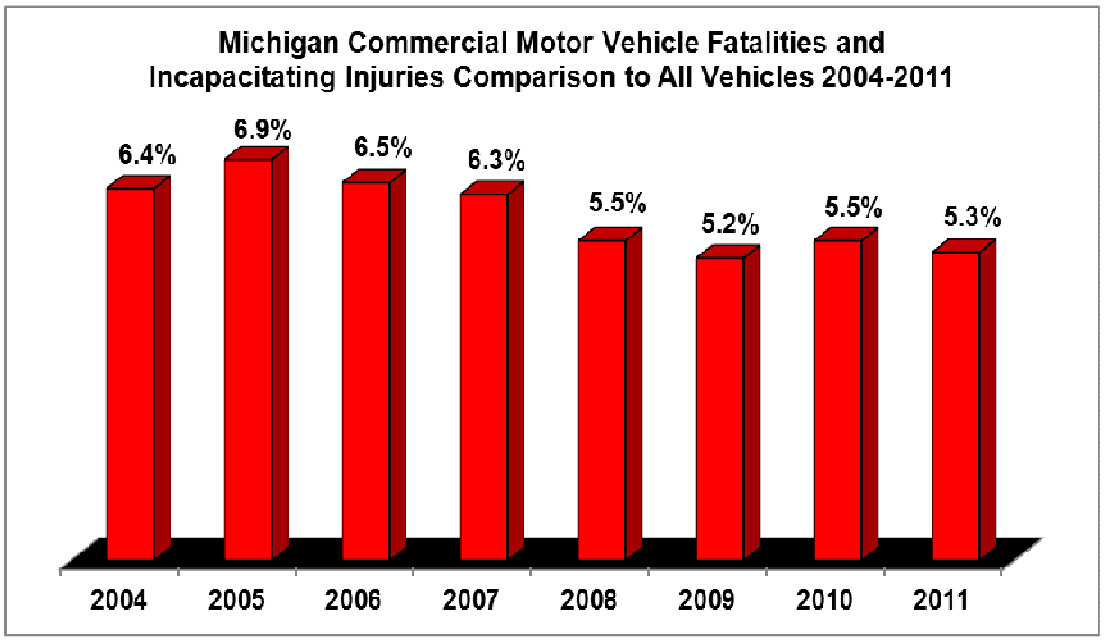
State Truck Crash Data

In Michigan in 2011, there were 10,511 CMV-involved traffic crashes resulting in 2,591 injuries and 73 fatalities. CMV-involved crashes and injuries make up a fairly small percentage of the overall crashes and injuries, 3.7 percent and 3.6 percent respectively. CMV-involved truck fatalities though, represent 8.3 percent of fatalities in Michigan. Since 1998, even though the total number of CMV crashes, injuries, and fatalities has declined, the percentage represented by all crashes has remained fairly constant.

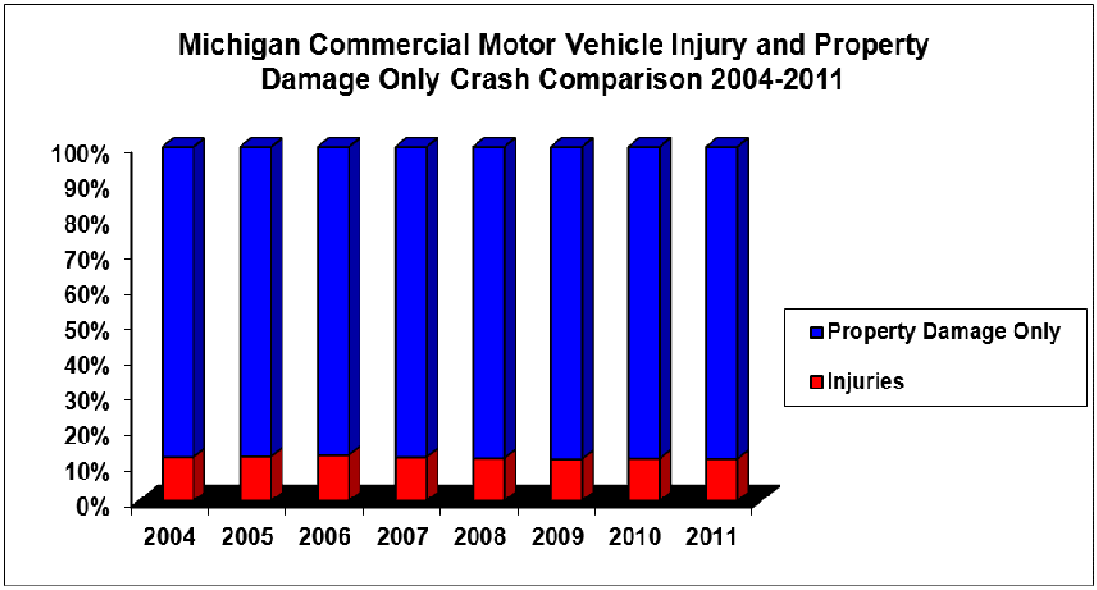


State Truck Injury Data

Michigan's CMV fatality and incapacitating injury percentage comparison to total fatality and incapacitating injury percentages have remained somewhat steady since 2004 while leveling off somewhat in 2009-2011. The graph below illustrates that CMV fatalities and incapacitating injuries are a small steady percentage compared to the total number which occur each year.



Michigan's CMV "property damage only" crashes are much higher than the injury crashes at 88 percent and 12 percent respectively from 2004-2011.



MISSION

To improve truck safety by providing Michigan's trucking industry and citizens of Michigan with effective educational programs, collaboration, and by addressing significant truck safety issues.

VISION

All roadway users arrive SAFELY at their destinations.

EMPHASIS AREAS

To support the mission and vision of the MTSC, data driven emphasis areas and strategies were identified. These emphasis areas include strategies derived from the NCHRP Report 500 Series Implementation Guide-*Volume 13 "Guide for Reducing Collisions Involving Heavy Trucks" (1) and the UMTRI 2007 report "Strategies to Reduce Commercial Motor Vehicle-involved Crashes, Fatalities, and Injuries in Michigan"* (2).

- Improve CMV driver performance through education and enforcement.
- Reduce fatigue-related crashes. (1)
- Strengthen commercial driver's license (CDL) programs. (1&2)
- Increase knowledge on how CMVs and cars can "Share The Road." (1&2)
- Improve maintenance of heavy trucks. (1&2)
- Identify and correct unsafe roadway infrastructure and operational characteristics. (1)
- Improve and enhance truck safety data. (1&2)
- Deploy truck safety initiatives, technologies, and best safety practices. (1&2)

OBJECTIVES

Based on the above referenced emphasis areas the following objectives were identified:

- Reduce the number of CMV-involved fatal crashes by a statistically significant number below the five year trend line taking into consideration the commercial motor vehicle miles traveled (CVMT) each year by 2015.
- Reduce the percentage of CMV-involved fatalities per 100 million CMVT by a statistically significant number below the five year trend line by 2015.
- Increase the CMV safety belt usage by a statistically significant percentage by 2015.
- Evaluate the CMV simulator use to calculate the effectiveness of the training by examining use rates by drivers and crash trend line statistics after training by 2015.

Improve CMV Performance through Education and Enforcement

Background

Three factors are involved in any crash: the driver(s), the vehicle(s), and the driving environment. The Federal Motor Carrier Safety Administration (FMCSA) *Large Truck Crash Causation Study* found that driver action or inaction was the critical reason for 88 percent of crashes. Even if there are vehicle or roadway problems, the driver can usually react to prevent or mitigate a crash, and an excellent driver can counter some problems created by other drivers. While non-truck drivers are more likely to be at fault in multi-vehicle truck crashes (see page 14, "Share the Road"), errors by CMV drivers have a greater opportunity to lead to larger losses of life and property, and they are the only drivers to address in single-vehicle truck crashes. In 2011, there were 1,563 single-vehicle truck crashes in Michigan.

By statute and expertise, the MTSC has a unique capacity to address Michigan truck drivers and improve performance. Education helps drivers learn what the problems are and how they can improve driving. Concerns about crashes and safety motivate some to put knowledge into action, and the threat of enforcement compels the rest.

Model Strategies:

- Support education programs to improve CMV driver education and compliance with CDL requirements, enhance CMV driver performance by reducing driver fatigue and distraction, improve maintenance practices, increase the operability of heavy trucks, and support the use of crash-avoidance technology.
- Assess and address driver training needs through professional driver coaching.
- Provide education on the safety benefits of driver wellness programs.
- Improve defensive driving knowledge through the National Safety Council's *Defensive Driving Course for the Professional Truck Driver.*
- Improve decision driving skills through skid-pad training.
- Conduct inspections, compliance reviews, and weigh station operations.
- Report timely and accurate inspection and crash data.
- Investigate complaints of criminal activity and unsafe practices through increased enforcement.
- Modify speed limits and increase speed enforcement to enhance safety.
- Conduct mobile enforcement and implement Special Truck Enforcement Team (STET) operations in high-risk areas to improve compliance.

STET Operations Statistics performed by MCOs

		STETs 2009-2011			
	Safety Inspections	Verbal Warnings	Total Vehicle Stops	Total Citations	Speeding
2009	6,045	2,943	6,913	5,743	1,268
2010	5,760	2,652	6,623	5,481	1,137
2011	4,718	2,731	5,768	4,213	821
	Moving Traffic	Seat Belts	CDL	Illegal Parking	Log Book
2009	135	802	161	140	486
2010	164	831	120	150	458
2011	150	547	111	97	265

Reduce Fatigue- and Distraction-Related Crashes

Background

In a major national forum on truck safety, the primary safety issue identified was driver fatigue. Driver distraction has also been identified as a major factor in many serious CMV crashes. The reasons for driver fatigue are many, and only some may be addressed through state programs. Fatigued driving and distracted driving are frequently related, as fatigued drivers are less likely to pay adequate attention to the driving task. States can, however, take steps to reduce fatigued and distracted driving.

One way is to increase the efficiency of use of existing parking space for drivers needing rest and/or required to stop driving because of hours-of-service regulations. States can also modify existing space and create new areas to provide additional parking facilities. Rumble strips can alert tired drivers they are leaving the traffic lane. With regard to distracted driving, some aspects of the problem have been addressed directly through bans on cell phone use and texting while in transport.

Fatigue-related CMV crashes tend to be severe rear-end crashes or single-vehicle crashes in which the CMV ran off the road. Most CMV-fatigued driver crashes occurred at night, between midnight and 6 a.m., on interstate roads, and involved tractor-semi trailers or doubles operated by interstate carriers.

Michigan's abrupt increase in fatigued driving, cell phone use and distracted driving during a CMV crash can be attributed partially to increased electronic reporting on the UD-10 Michigan Crash Report form and the increase of specialized training made available to law enforcement on how to correctly assess and collect the data at the crash scene. Both variables were made possible by grants awarded to agencies through federal funds.

Model Strategies:

- Increase efficiency of existing parking spaces.
- Create additional parking spaces.
- Incorporate rumble strips into new and existing roadways.
- Increase fatigue awareness among CMV drivers.
- Increase fatigue awareness among all other drivers.
- Educate motor carriers and CMV drivers on the dangers of distracted driving.
- Support rules to control the use of cell phones while in operation and eliminate texting while driving.
- Explore innovative strategies such as the "Chain of Responsibility" to hold shippers, motor carriers, and receivers accountable for realistic scheduling to support safe freight hauling.
- Explore the effect of requiring compensation for loading, unloading, and wait time on fatigued driving.

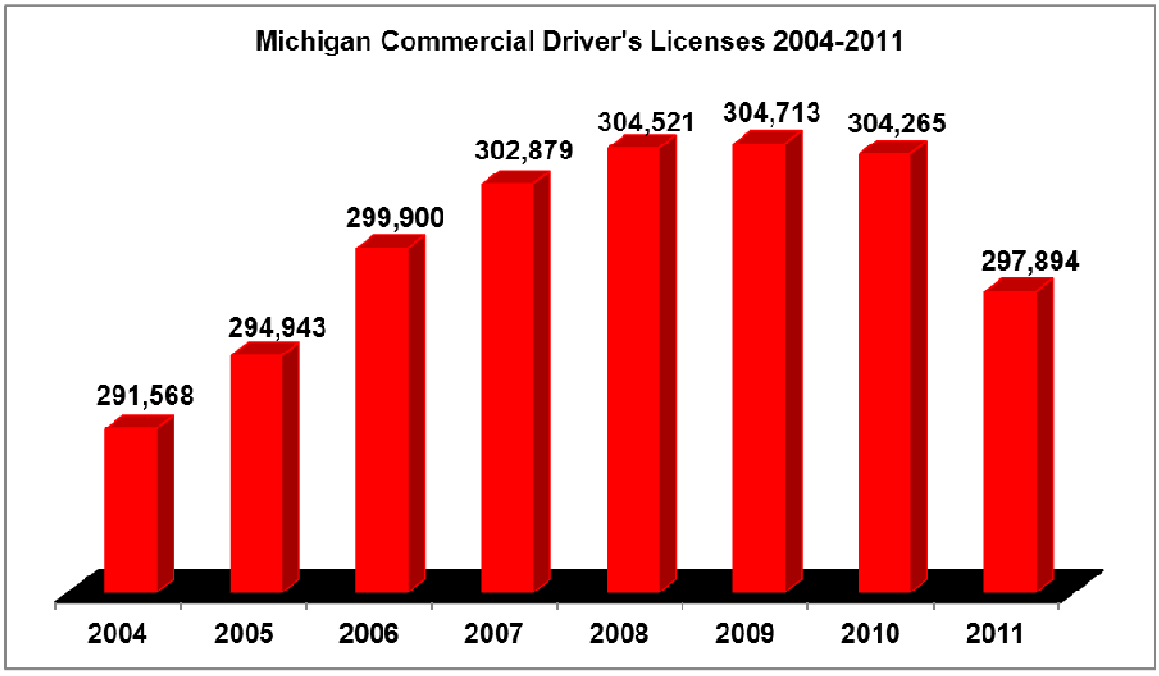
Strengthen CDL Safety Programs

Background
The CDL program established national standards for acquiring a license to operate heavy trucks. It has been fully implemented since April 1992.

Although the CDL program has achieved major improvements, e.g., reducing the problem of multiple licensing, and consolidating driver history information problems remain. The administration of the test can be improved, and measures can be taken to reduce fraud and improve the quality of both state and third-party testers.

Model Strategies:
- Educate motor carriers and drivers on the new driver metrics in the Federal Government's Compliance, Safety, and Accountability (CSA) program.
- Improve test administration for the CDL by state and third-party testers.
- Increase compliance by truck drivers and firms with applicable statutes and regulations.
- Thoroughly evaluate candidate examiners, including criminal background checks and driver history checks. Recertify driver examiners annually.
- Develop and present a program on the Driver Performance Measurement BASIC (one of the new CSA metrics) for state certified CDL instructors as part of the professional development requirement.

Michigan's CMV licenses have increased by 2.16 percent since 2004 and decreased by 2.09 percent from 2010 to 2011.



Increase Knowledge and Education on How CMVs and Cars Can "Share the Road"

Background

Most truck fatalities occur in multi-vehicle crashes, and recent trends indicate about 90 percent of all CMV-related fatalities were occupants of the other vehicle(s). In crashes involving a heavy truck and a passenger vehicle (80 percent of all fatal truck crashes), most crashes are initiated by driving errors by light vehicle drivers around heavy trucks. Some car drivers are not aware trucks have substantially different performance characteristics (stopping distances, acceleration, and maneuverability). Consequently, efforts need to focus on non-truck drivers to reduce truck fatalities. Automobile and other light vehicle drivers need better information on how to share the road with large trucks.

Model Strategies:

- Incorporate "Share the Road" messages and information into materials targeting car and other light vehicle drivers through print and electronic media.
- Continue to actively participate in the GTSAC to ensure the special safety needs of trucks are reflected in their strategies.
- Develop cooperative programs and partnerships with state departments, e.g., MDOT, OHSP, MDOS, MSP, and other traffic safety partners to improve information sharing and understanding of the collective mission of truck safety.
- Increase the level of attention to truck safety issues in public and private driver education programs used across the state as well as in the driver education test used by the MDOS.
- Increase awareness of "Share The Road" program in strategic locations: MDOS branch offices, Michigan Welcome Centers, and highway rest stops.

Improve Maintenance of Heavy Trucks

Background

Heavy trucks generally accumulate high mileage. In 2000, combination trucks averaged almost 65,000 miles, compared with almost 12,000 for passenger vehicles. State vehicle inspection programs (and not all states have them) are designed for passenger cars and usually require inspection only once a year. Large trucks need to be inspected much more frequently. Roadside inspections routinely identify sizeable proportions of trucks that need to be taken out of service immediately because they are considered too hazardous to continue operating. In-depth inspection of trucks in fatal crashes indicates about 1/3 would have been removed from service if inspected prior to the crash.

Model Strategies:

- ❖ Increase and strengthen truck maintenance programs and inspection performance.
- ❖ Conduct "Periodic Inspection Training" seminars for maintenance personnel.
- ❖ Conduct post-crash inspections of serious crashes to identify maintenance related problems.
- ❖ Conduct targeted enforcement for regulatory compliance by both motor carriers as well as CMV drivers.
- ❖ Expand education and training programs for motor carriers and CMV drivers.

Safety Inspections 2009-2011	
2009	**6,045**
2010	**5,760**
2011	**4,718**

Improve and Enhance Truck Safety Data

Background

Timely, accurate, and accessible data is the foundation of any successful highway safety program. This data is required to identify problems (with both vehicles and drivers), establish priorities, design interventions, evaluate countermeasures, and detect emerging problems. Important data on heavy trucks and operators is collected and maintained by law enforcement, the judicial system, driver records, vehicle registration, and motor carrier records. Rapid entry and compilation of such data can greatly improve the detection of problems and enable immediate interventions.

Model Strategies:

- ❖ Increase the timeliness, accuracy, and completeness of truck safety data.
- ❖ Utilize heavy-truck crash data more effectively in decision-making on supported programs.
- ❖ Conduct periodic analyses of crash data to provide longitudinal information on crashes.
- ❖ Benchmark Michigan against other states with respect to both crash data as well as truck safety.
- ❖ Update/modify the UD-10 Crash Report to allow for more accurate capture of CMVs' information.
- ❖ Data linkage. Work to facilitate the linkage of data from different administrative sources, as well as make sure common definitions are used so the data may be compared.

Deploy Truck Safety Initiatives, Technologies, and Best Safety Practices

Background

Unlike the general population of drivers and vehicles, CMV drivers and trucks operate under management supervision. Effective supervision of drivers and the vehicle fleet requires active and systematic management to ensure compliance with all federal and state regulations. Moreover, regulatory compliance is not the only goal. Many safety management activities of the most safety-conscious fleets go well beyond minimum compliance requirements. One practice to enhance fleet safety above minimum required levels is the purchase and use of truck safety technologies (electronic braking systems, high performance tires, convex and side mounted mirror, etc) and advanced technologies (collision avoidance warning systems, adaptive cruise control, back-up camera, etc).

Model Strategies:

- Promote the development and deployment of truck safety technologies.
- Incorporate results from the latest research into the benefits as well as costs of advanced collision avoidance technologies to make sure carriers of all sizes are aware of the state of the art.
- Consider modes for providing incentives for the adoption of advanced collision avoidance technologies.
- Incorporate new technologies into driver training programs as appropriate and cost-effective.
- Identify “best management practices” as part of any safety management program.
- Enhance the visibility/activities of the MTSC through effective promotions and communications.
- Provide nationally recognized safety management programs that will enhance knowledge of truck safety initiatives through industry “best safety practices.”

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
CDL	Commercial Driver's License
CMV	Commercial Motor Vehicle
CSA	Compliance, Safety, and Accountability
CVED	Commercial Vehicle Enforcement Division
CVMT	Commercial Vehicle Miles Traveled
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
GTSAC	Governor's Traffic Safety Advisory Commission
MCO	Motor Carrier Officer
MCTS	Michigan Center for Truck Safety
MDE	Michigan Department of Education
MDOS	Michigan Department of State
MDOT	Michigan Department of Transportation
MSP	Michigan Department of State Police
MTA	Michigan Trucking Association
MTSC	Michigan Truck Safety Commission
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Transportation Safety Administration
OHSP	Office of Highway Safety Planning
STET	Special Transportation Enforcement Team
UMTRI	University of Michigan Transportation Research Institute

ACKNOWLEDGEMENTS

The update of this strategic safety plan was completed by the Michigan Truck Safety Commission (MTSC) in September 2012. The MTSC consists of a diverse group of commissioners and at large traffic safety professional members including representatives from:

Michigan Department of State
Michigan Department of State Police
Commercial Motor Vehicle Enforcement Division
Michigan Department of Transportation
Michigan Office of Highway Safety Planning
Michigan Transportation Commission
Michigan Trucking Association
Michigan Four-Year Colleges or Universities
Michigan Community Colleges
Michigan Organized Labor
Michigan General Public

All parts as described within this plan are necessary, but there is flexibility to customize the structure and process according to external and internal factors. It is anticipated that the plan periodically will be updated and otherwise revised.